

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A process for preparing Mineral Turpentine Oil (MTO) with boiling point in the range of 145° to 205°C and having saybolt color rating better than + 20 from crude oil feed, rich in nitrogen and / or active sulphur, said process comprising subjecting ~~the~~ a petroleum hydrocarbon solvent to liquid phase adsorption in at least one column containing an adsorbent substance selected from molecular sieves, modified clays and mixtures thereof at ambient temperatures and pressure.

Claim 2 (original): A process as claimed in claim 1, wherein the petroleum hydrocarbon solvent feed has saybolt color rating worse than + 20.

Claim 3 (original): A process as claimed in claim 1, wherein the petroleum hydrocarbon solvent feed has saybolt color rating in the range of +5 to +20.

Claim 4 (original): A process as claimed in claim 1, wherein the crude oil feed is selected from the group comprising of Nigerian low sulphur crude, PG mix high sulphur crude or a mixture thereof.

Claim 5 (original): A process as claimed in claim 1, wherein the petroleum hydrocarbon solvent feed has total nitrogen content of 5.2 ppm.

Claim 6 (original): A process as claimed in claim 1, wherein the petroleum hydrocarbon solvent feed has total sulfur content of 0.136% wt.

Claim 7 (original): A process as claimed in claim 1, wherein the petroleum hydrocarbon solvent feed has total mercaptan content of 2.5ppm.

Claim 8 (original): A process as claimed in claim 1, wherein the MTO has boiling point in the range of 180 to 205°C.

Claim 9 (canceled)

Claim 10 (original): A process as claimed in claim 1, wherein the MTO has saybolt color rating in the range of +20 to + 30.

Claim 11 (original): A process as claimed in claim 1, wherein the MTO has total nitrogen content equal to or less than 1 ppm.

Claim 12 (original): A process as claimed in claim 1, wherein the MTO has total nitrogen content less than 1 ppm.

Claim 13 (original): A process as claimed in claim 1, wherein the MTO has zero mercaptan content.

Claim 14 (original): A process as claimed in claim 1, wherein the adsorption is carried out at a pressure of atmospheric to 20 kg/cm².

Claim 15 (original): A process as claimed in claim 1, wherein the adsorption is carried out at an ambient temperature to 50°C.

Claim 16 (currently amended): A process as claimed in claim 1, wherein the molecular sieve has a core diameter of ~~40A~~ 10 Angstroms.

Claim 17 (original): A process as claimed in claim 1, wherein the molecular sieve is 13X.

Claim 18 (original): A process as claimed in claim 1, wherein the clay is modified to increase its acidity.

Claim 19 (original): A process as claimed in claim 1, wherein the clay is modified to increase its surface area.

Claim 20 (original): A process as claimed in claim 1, wherein the modified clay has residual acidity in the range of 8.5 to 16 mg KOH/g.

Claim 21 (original): A process as claimed in claim 1, wherein the modified clay has surface area in the range of 350 to 425 m.sq.²/g.

Claim 22 (original): A process as claimed in claim 1, wherein the adsorbent article is regenerated by heating it at temperatures between 200 to 300°C.

Claim 23 (original): A process as claimed in claim 1, wherein the adsorbent article is regenerated by heating it at temperatures between 200 to 300°C in nitrogen atmosphere.

Claim 24 (original): A process as claimed in claim 1, wherein said process can be carried out in batch wise or in continuous manner.

Claim 25 (original): A process for preparing Mineral Turpentine Oil (MTO) having boiling point in the range of 145° to 205°C and having saybolt color rating better than + 20 from crude oil feed rich in nitrogen and / or active sulphur, said process comprising:

distilling the crude oil to obtain Kerosene/Aviation Turbine fuel (ATF) cut.

subjecting the Kerosene/ATF cut to Merox treatment for removing mercaptans followed by passing it through at least one column containing fullers earth;

distilling the Merox treated Kerosene/ATF cuts to obtain MTO having boiling point in the range of 145° to 205°C and saybolt color rating less than +20 and

subjecting the MTO thus obtained to liquid phase adsorption in at least one column containing an adsorbent substance selected from molecular sieves, modified clays and mixtures thereof at ambient temperatures and pressure.

Claim 26 (original): A process as claimed in claim 25, wherein the crude oil feed is selected from the group comprising of Nigerian low sulphur crude, PG mix high sulphur crude or a mixture thereof.

Claim 27 (withdrawn): An apparatus for obtaining petroleum hydrocarbon solvent with improved color stability, said apparatus comprising a means for pumping the petroleum hydrocarbon solvent, a means for housing an adsorbent substance and a means for controlling the flow of the petroleum hydrocarbon solvent through the adsorbent substance.

Claim 28 (withdrawn): An apparatus as claimed in claim 27, wherein the housing means is provided with vents.

Claim 29 (withdrawn): An apparatus as claimed in claim 27, wherein the pumping means pump the petroleum hydrocarbon solvent from a MTO column to the housing means.

Claim 30 (withdrawn): An apparatus as claimed in claim 27, wherein the housing means is a cylindrical column.

Claim 31 (withdrawn): An apparatus as claimed in claim 27, wherein the housing means is a cylindrical column.

Claim 32 (withdrawn): An apparatus as claimed in claim 27, wherein the molecular sieve has a core diameter of 10A.

Claim 33 (withdrawn): An apparatus as claimed in claim 27, wherein the molecular sieve is 13X.

Claim 34 (withdrawn): An apparatus as claimed in claim 27, wherein the clay is modified to increase its acidity.

Claim 35 (withdrawn): An apparatus as claimed in claim 27, wherein the clay is modified to increase its surface area.

Claim 36 (withdrawn): An apparatus as claimed in claim 27, wherein the modified clay has residual acidity in the range of 8.5 to 16 mg KOH/g.

Claim 37 (withdrawn): An apparatus as claimed in claim 27, wherein the modified clay has surface area in the range of 350 to 425 m.sup.2/g.

Serial No. 10/090,446
Group Art Unit No. 1764
Reply to Office Action of August 27, 2003

Claim 38 (withdrawn): An apparatus as claimed in claim 27, wherein the means for controlling the flow of the petroleum hydrocarbon solvent through the adsorbent substance comprises of valves and pumps.